

1 PROGRAMMABLE LOGIC DEVICE WITH DECRYPTION AND
2 STRUCTURE FOR PREVENTING DESIGN RELOCATION

3
4 Stephen M. Trimberger
5 Raymond C. Pang
6 Walter N. Sze
7 Jennifer Wong
8
9

10 It is sometimes desirable to protect a design used in a PLD from being
11 copied. According to the present invention, the design is encrypted, then loaded
12 into a PLD, then decrypted, and then loaded into the configuration memory of the
13 PLD. An attacker could relocate the design to a visible part of the PLD and learn
14 the design. The present invention prevents design relocation by attaching address
15 information to the encryption key or by encrypting an address where the design is
16 to be loaded as well as encrypting the design itself. Thus, if an attacker tries to
17 load the design into a different part of the PLD, the encrypted design will not
18 decrypt properly.